

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Taiwan application number 92113560 on 05/20/2003. It is noted, however, that applicant has not filed a certified copy of the Taiwan 92113560 application as required by 35 U.S.C. 119(b).

2.

### *Claim Objections*

3. Claim 7 is objected to because of the following informalities: Claim 7 is written as to include both claim 7 it self and claim 8. Claim 7 is written as follows "The flashlight control device of claim 2, wherein said light-tuning circuit further comprises a discharger circuit, coupled to said integrator, for receiving a discharger signal from said central processor unit, said integrator discharging through said discharger circuit when said discharger signal is an enabled discharger signal. **8. The flashlight control device of claim 1, wherein said flashlight trigger circuit further comprises an Insulated Gate Bipolar Transistor for enabling or disabling said flashlight trigger circuit to emit an incident light.**" Highlighted part should be deleted, since the highlighted part is written below Claim 7 as Clam 8.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1 is rejected under 35 U.S.C. 102 (e) as being anticipated by Nakata et al. (US 6,498,900 A1).

6. Claim 1, A flashlight control device (Figure 1, Element 71, Element 35, and Element 23, Col 5, Line 6 – 8), for a digital camera (Figure 1, Element 11), to control an amount of a light-emission of a flashlight, comprising (Col 5, Line 6 – 8):

A charger (Figure 2, Element 75), including a charger circuit (Figure 2, Element 75) and a capacitor (Figure 2, Element Cm) for receiving a charge-enabling signal (Charge Signal Input) from a central processor unit (Figure 1, Element 35, and Element 23), wherein said charger responsive to said charge enabling-signal charges said capacitor (Col 5, Line 25 – 44);

A detector (Figure 1, Element 79), coupled to said charger, for detecting a voltage of said capacitor, when the voltage of said capacitor reaches a predetermined voltage, said detector disabling said charger to stop charging said capacitor and said detector generating a charge-complete signal (Charge voltage detection signal) to

Art Unit: 4178

inform said central processor unit (Col 5, Line 44 – 46 , “The charge voltage detection circuit block 79 detects the charge voltage of the main condenser Cm and outputs the charge voltage detection signal to the main CPU 35);

A flashlight trigger circuit (Figure 1, Element 77), coupled to said charger, for receiving a voltage of said capacitor , wherein said central processor unit responsive to said charge-complete signal generates a flashlight-trigger signal (Trigger signal input) to enable said flashlight trigger circuit to emit an incident light to an object (Col. 4, Line 44 – 49); and

A light-tuning circuit (CCD line sensor) coupled to said flashlight trigger circuit, for receiving a reflected light from said object and conversing said reflected light to a exposure voltage, when said exposure voltage is higher than a reference voltage, said light-tuning circuit disabling said flashlight trigger circuit to stop emitting said incident light (Col 3, Line 60 – 67 to Col 4, Line 1 – 4).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 9 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by lida et al. (US 4,523,830).

9. Claim 9, lida discloses a method of operating a flashlight control device, for a digital camera using a flashlight, comprising the steps of:

Triggering said flashlight to emit an incident light to an object (Col 2, Line 63 – 68 to Col 3, Line 1 – 11);

Receiving a reflected light reflected from said object (Col 4, Line 16 – 18), and  
Optics-electricity conversing said reflected light to an exposure voltage (Col 3, Line 61 – 68 and Col 4, line 1 – 25); and

Stopping emitting said incident light, responsive to said exposure voltage higher than a reference voltage (Col 3, Line 61 – 68 and Col 4, line 1 – 25).

10. Claim 10, lida discloses a method of operating a flashlight control device 9, said step of receiving a reflected light and optics-electricity conversing said reflective light to an exposure voltage, further comprising:

Conversing said reflected light to an exposure current (Col 3, Line 61 – 66, “discharging current flowing through the flash discharge tube FL”).

Integrating said exposure current to output said exposure voltage (Col 3, Line 61 – 68 and Col 4, line 1- 25).

11. Claim 11, lida discloses a method of operating a flashlight control device 9, wherein said reference voltage is adjustable (Col 3, Line 48 – 60).

12. Claim 12, lida discloses a method of operating a flashlight control device 9, further comprising the step of charging a capacitor to generate a charging voltage for supplying said flashlight (Col 3, Line 29 – 31).

13. Claim 13, lida discloses a method of operating a flashlight control device 12, further comprising the steps of:

Detecting said charging voltage (Col 3, Line 29 – 32); and

Stopping charging said capacitor, responsive to said charging voltage reaching a predetermined voltage (Col 3, Line 29 – 32).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2 – 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakata et al. (US 6,498,900 A1) in view of lida et al.(US 4,523,830).

16. Claim 2, Nakata discloses flashlight control device comprising a light-tuning circuit.

Nakata does not clearly disclose the flashlight control device comprising light-tuning circuit further comprising a phototransistor, integrator, comparator and a logic gate.

However Iida discloses an electronics flash unit (Figure 2B, Element 1) and a camera (Figure 2B, Element 2) comprising:

A phototransistor (Figure 2B, Element PD1) for receiving said reflected light and converting said reflected light to an exposure current (Col 4, Line 16 – 18);

An integrator (Figure 2A, Elements R2 and C2), coupled to said phototransistor, for integrating said exposure current to output said exposure voltage (Col 3, Line 60 – 66 );

A comparator circuit (Figure 2A, Element CP), coupled to said integrator, for comparing said exposure voltage and said reference voltage and outputting a comparison signal, said comparison signal being an enabled-comparison signal when said exposure voltage is higher than said reference voltage (Col 3, Line 66 – 68) ; and

A logical gate (Figure 2B, Element G11), coupled to said comparator circuit, responsive to said comparison signal and said flashlight-trigger signal generating a flashlight-driving signal to said flashlight trigger circuit, said flashlight-driving signal, responsive to said enabled-comparison signal, disabling said flashlight trigger circuit to stop emitting said incident light (Col 4, Line 16 – 68 to Col 5, Line 1 – 18).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the light tuning circuit or CCD line sensor of Nakata with the light tuning circuit components of Iida to integrate those components so to

receive the light reflected by the object, to integrate parts of the discharging current flowing through the flash discharge tube while the discharge tube is emitting light, to detect if the integrated value or voltage has exceeded the reference voltage that is whether the quantity of light emitted by the flash discharge tube FL has exceeded the critical quantity of light and to produce an output of high level that makes the output from the flash trigger circuit high level in order to detect failure of light emission and for detecting an under- exposure (Col 3, Line 61 – 68 to Col 4, Line 1 – 68)

17. Claim 3, Nakata in view of Iida discloses the flashlight control device of claim 2, wherein said logic gate is a NOR gate (Iida, Figure 2B, Element G11).

18. Claim 4, Nakata in view of Iida the flashlight control device of claim 2, where in said light-tuning circuit further comprises a voltage generating circuit (Iida, Figure 2A, Elements R7 and ZD), coupled to said comparator circuit, for receiving a reference signal from said central processor unit and adjusting and lowpass-filtering said reference signal to output said reference voltage (Iida, Col 3, Line 37 – 40).

19. Claim 5, Nakata in view of Iida the flashlight control device of claim 4, said voltage generating circuit further comprising:

A voltage adjusting circuit, for adjusting said reference signal to output a voltage adjusting signal (Iida Col 3, Line 48 – 60 ); and

A lowpass filter, coupled to said voltage adjusting circuit, for lowpass filtering

said voltage adjusting signal to output said reference voltage (It is known in the art to use low pass filter out undesired voltage and to output the desired reference voltage).

20. Claim 6, Nakata in view of Iida the flashlight control device of claim 4, wherein said reference signal is adjusted by a pulse width modulation (It is also well known in the art to use pulse width modulation to adjust different kind of signals).

21. Claim 7, Nakata in view of Iida the flashlight control device of claim 2, wherein said light-tuning circuit further comprises a discharger circuit (Iida, Figure 2A, Element R3), coupled to said integrator, for receiving a discharger signal from said central processor unit, said integrator discharging through said discharger circuit when said discharger signal is an enabled discharger signal (Iida, Col 3, Line 61 – 66).

22. Claim 8, Nakata in view of Iida the flashlight control device of claim 1, wherein said flashlight trigger circuit further comprises an Insulated Gate Bipolar Transistor for enabling or disabling said flashlight trigger circuit to emit an incident light (Nakata, Col 5, Line 30 – 32 ).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Selam T. Gebriel whose telephone number is 571-270-1652. The examiner can normally be reached on Monday-Thursday 7.30am-5.00pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Tran can be reached on 571-272-7305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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